

### **Amendments to the Claims:**

Please amend Claims 1 to 6 as shown below. This listing of claims will replace all prior versions and listings of claims in the application:

#### **Listing of Claims:**

1. (Currently Amended) An electric discharge machining method comprising the steps of:  
  
    setting a plurality of machining conditions;  
    obtaining a removal volume (V) corresponding to a volume of material to be removed from a workpiece;  
    obtaining a removal volume rate ( $V_m$ ) corresponding to the set machining conditions;  
    determining a setting machining time (T) based on the removal volume (V) and the removal volume rate ( $V_m$ );  
    starting electric discharge machining of the [[a]] workpiece in accordance with  
~~under~~ the set machining conditions; and  
    completing electric discharge machining of the workpiece when the [[set]] machining time ( $T$ ) has elapsed from the start of electric discharge machining.
2. (Currently Amended) The electric discharge machining method according to Claim 1, wherein the removal volume ( $V$ ) is obtained based on a dimension of the material to be removed ( $d$ ) and a removal surface area ( $S$ ).
3. (Currently Amended) An electric discharge machining method comprising the steps of:  
  
    Setting a plurality of machining conditions;

obtaining a removal volume (V) corresponding to a volume of material to be removed from a workpiece;

obtaining a removal volume per single discharge (V<sub>p</sub>) corresponding to the set machining conditions;

determining ~~setting~~ a number of electric discharges (P) based on the removal volume (V) and the removal volume per single discharge (V<sub>p</sub>);

starting electric discharge machining of the ~~[[a]]~~ workpiece in accordance with ~~under~~ the set machining conditions; and

completing electric discharge machining of the workpiece when the ~~[[set]]~~ number of discharges (P) have been completed from the start of electric discharge machining.

4. (Currently Amended) The electric discharge machining method according to Claim 3, wherein the removal volume (V) is obtained based on a dimension of the material to be removed (d) and a removal surface area (S).

5. (Currently Amended) A sinker electric discharge machining apparatus for machining a workpiece using a tool electrode comprising:

A power supply device for supplying a current pulse having a current peak of 0.2A - 2A and an on-time of 0.5 μseconds to 5 μseconds to a gap formed between the tool electrode and the workpiece;

a storage device for storing a database correlating a plurality of removal volume rates ~~[[rate]]~~ (V<sub>m</sub>) with corresponding sets of machining conditions, and storing a removal volume (V);

an input device for setting a selected set of machining conditions;

a calculating device for extracting a ~~[[the]]~~ removal volume rate (V<sub>m</sub>) corresponding to the selected set of machining conditions from the storage device, and calculating a machining time (T) based on the removal volume (V) and the extracted removal volume rate (V<sub>m</sub>); and

a time counter device for completing electric discharge machining when the machining time (T) has elapsed from a [[the]] start of electric discharge machining.

6. (Currently Amended) A sinker electric discharge machining apparatus for machining a workpiece using a tool electrode comprising:

a power supply device for supplying a current pulse having a current peak of 0.2A - 2A and an on-time of 0.5  $\mu$ seconds to 5  $\mu$ seconds to a gap formed between the tool electrode and the workpiece;

a storage device for storing a database correlating a plurality of removal volumes ~~volume~~ per single discharge (**V<sub>p</sub>**) with corresponding sets of machining conditions, and storing a removal volume (**V**);

an input device for setting a selected set of machining conditions;

a calculating device for extracting a [[the]] removal volume per single discharge (**V<sub>p</sub>**) corresponding to the selected set of machining conditions from the storage device, and calculating a number of electric discharges (**P**) based on the removal volume (**V**) and the extracted removal volume per single discharge (**V<sub>p</sub>**); and

a discharge counter device for completing electric discharge machining when the number of electric discharges (**P**) have been completed from a [[the]] start of electric discharge machining.